

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Patent Application of:

Shigetomo Tsujihata et al.

Group Art Unit: 1774

Application No.: 10/715,600

Examiner: Pamela R. Schwartz

Filed: November 19, 2003

For: INK JET RECORDING SHEET

DECLARATION UNDER 37 C.F.R. §1.132

Honorable Commissioner of Patents and Trademarks

P.O. Box 1450, Alexandria, Virginia 22313-1450

Sir:

I, Shigetomo Tsujihata, do declare and state as follows:

I graduated from the Graduate School of Kyoto University, Department of Agriculture, Faculty of Forest Engineering with a Master's degree in Agriculture in March 1996;

I joined Fuji Photo Film Co., Ltd. in August 2000, and since that time I have been engaged in research and development of polymer materials;

I am a co-inventor of the subject matter disclosed and claimed in the above-identified application; and

I am familiar with the Office Action of July 23, 2007, and understand that the Examiner has requested to provide

information that has been determined by the Examiner as reasonably necessary for examination of the present application.

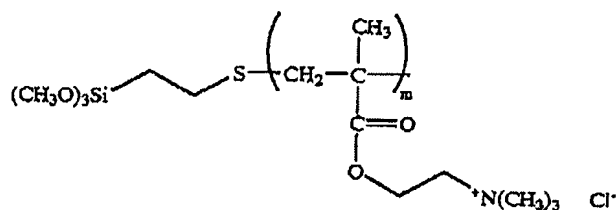
It is believed that it is commonly known by those skilled in the art that the inorganic/organic value (I/O value) of a compound can be calculated by: (1) calculating both a sum of organic property values of atoms/groups/partial structures in the compound and a sum of inorganic property values of atoms/groups/partial structures in the compound; and (2) dividing the sum of inorganic property values by the sum of organic property values so as to read the I/O value of the compound.

Herein, one carbon atom is known as having an organic property value of 20 and an inorganic property value of 0. The organic/inorganic property values of other atoms/partial structures are shown in Table 1.1 (Table of Groups having Inorganic Property) shown in "Yuki Gainen Zu (Organic Conceptual Chart)" written by Yoshio Koda and published by Sankyo Publishing Co., in 1984. An organic property value of carbon atom(s) in a group/structure which is classified in the "group having inorganic property" in Table 1.1 should be added to the sum of organic property values as indicated in "Note" of Table 1.1. An organic property value of carbon atom(s) in a group/structure which is classified in the "group having organic

property and inorganic property" in Table 1.1 has been accounted in the organic property value thereof, and thus should not be added to the sum of organic property values.

For example, the cationic polymer 4 in column 26 of U.S. Patent No. 6,743,850 can be estimated to be 485/180 (=approximately 2.7) by calculating as follows.

(Cationic polymer 4)



Cationic polymer 4	Atom, Group, or Partial structure	Inorganic property			Organic property		
		Inorganic property value (I)	Number (n)	I × n	Organic property value (O)	Number (n)	O × n
	Carbon				20	9	180
	-NH ₄	≥400	1	400			
	>CO	65	1	65			
	-O-	20	1	20			
		Sum of Inorganic property value(s)		485	Sum of Organic property value(s)		180
		I/O value = 485/180 = 2.7					

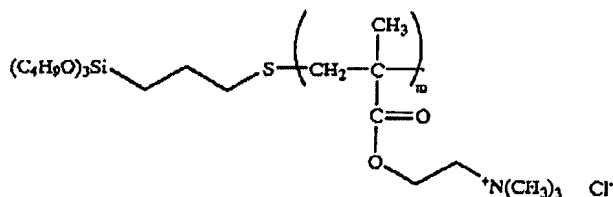
The cationic polymer 4 (more than 90 wt% relative to the total weight of the cationic polymer 4) is a skeleton consisting of a repeating unit. Accordingly, the I/O value of the cationic polymer 4 is estimated by calculating the I/O value of the repeating unit. The counter anion (Cl⁻) is not taken into

consideration because it is a free ion.

The repeating unit has nine carbon atoms. The repeating unit has one -NH_4 group, one >CO group, and one -O- structure as the groups having inorganic property. Further, the repeating unit does not have any group having both organic/inorganic properties. Accordingly, the sum of the organic property values for the repeating unit is: [organic property value of carbon atom] \times [number of carbon atoms] = $(20 \times 9) = 180$. Further, the sum of the inorganic property values for the repeating unit is: [inorganic property value of -NH_4 group] \times [number of -NH_4 group] + [inorganic property value of >CO group] \times [number of >CO group] + [inorganic property value of -O- structure] \times [number of -O- structure] = $((\text{at least})400 \times 1) + (65 \times 1) + (20 \times 1) = 485$.

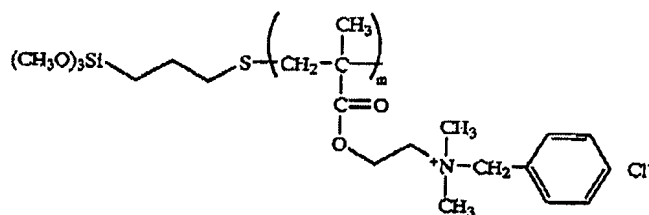
The I/O values of cationic polymers 5, 6 and 7 in column 27 of U.S. Patent No. 6,743,850 can also be estimated to be $485/180$ (=approximately 2.7), $500/300$ (=approximately 1.7), and $585/180$ (=approximately 3.3) respectively by calculating in the same manner.

(Cationic polymer 5)



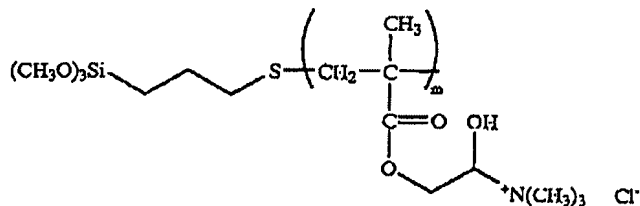
Cationic polymer 5	Atom, Group, or Partial structure	Inorganic property			Organic property		
		Inorganic property value (I)	Number (n)	I × n	Organic property value (O)	Number (n)	O × n
	Carbon				20	9	180
	-NH ₄	≥400	1	400			
	>CO	65	1	65			
	-O-	20	1	20			
Sum of Inorganic property value(s)				485	Sum of Organic property value(s)		180
I/O value = 485/180 = 2.7							

(Cationic polymer 6)



Cationic polymer 6	Atom, Group, or Partial structure	Inorganic property			Organic property		
		Inorganic property value (I)	Number (n)	I × n	Organic property value (O)	Number (n)	O × n
	Carbon				20	15	300
	-NH ₄	≥400	1	400			
	>CO	65	1	65			
	-O-	20	1	20			
	Benzene ring	15	1	15			
Sum of Inorganic property value(s)				500	Sum of Organic property value(s)		300
I/O value = 500/300 = 1.7							

(Cationic polymer 7)



Cationic polymer 7	Atom, Group, or Partial structure	Inorganic property			Organic property		
		Inorganic property value (I)	Number (n)	I × n	Organic property value (O)	Number (n)	O × n
	Carbon				20	9	180
	-NH ₄	≥400	1	400			
	-OH	100	1	100			
	>CO	65	1	65			
	-O-	20	1	20			
		Sum of Inorganic property value(s)		585	Sum of Organic property value(s)		180
I/O value = 585/180 = 3.3							

I further declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true, and further, that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

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DATE: November 19, 2007

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